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BIOLOGICAL EVALUATION OF RED-HEADED PINE SAWFLY ON THE KENTON RANGER DISTRICT OTTAWA NATIONAL FOREST

By Imants Millers

ABSTRACT

Red-headed pine sawfly, Neodiprion lecontei (Fitch), population build-up is found on the Kenton Ranger District, Ottawa National Forest. The Timber Managers are advised that one plantation, about 7 acres, has sufficiently high population to be considered for suppression.

INTRODUCTION

The red-headed pine sawfly is an important pest of red pine plantations. Defoliation surveys by the Ottawa National Forest and the 1968 Biological Evaluation from this office indicated that eight sawfly populations are present in 3 plantations (Hastings, 1968). These same areas were re-evaluated in 1969.

TECHNICAL INFORMATION

A. Causal Agent:

Red-headed pine sawfly, Neodiprion lecontei (Fitch)

B. Host Tree:

Red pine, Pinus resinosa Ait.

C. Type of Damage:

Larval feeding on current and old needles. Complete defoliation of red pine branch or tree results in death of the branch or tree (Benjamin, 1955).

D. Ecological Factors:

Although more than 50 insect parasites and predators attack the sawfly, seldom do they effectively control outbreak populations. Outbreak collapses have been attributed to diseases and weather. Rodents feed heavily on the overwintering cocoons, but their affect on population is not known (Benjamin, 1955).

E. Location and Extent of Outbreak

The 3 red pine plantations reported infested in 1968 (Hastings, 1968) were re-examined in 1969. The survey was made by the St. Paul Field Office personnel. About 500 trees were examined in each plantation, or separate units of plantations (Map 1). Each tree was rated for presence or absence of sawfly defoliation (Table I).

TABLE I. Red-headed pine sawfly population trend in 3 red pine plantations on the Kenton Ranger District, Ottawa National Forest

Area No.	Description T	R	S	Percent of Trees with Defoliation 1968	1969
I	47	38	26 N 1/2 NE	6.6	15.3
II	47	38	26 S 1/2 NE	3.3	2.8
III	47	36	31 NE	0.8	6.2
	47	36	31 NW	---	2.1

The results in Table I show that sawfly populations have increased in 2 plantations.

F. Discussion:

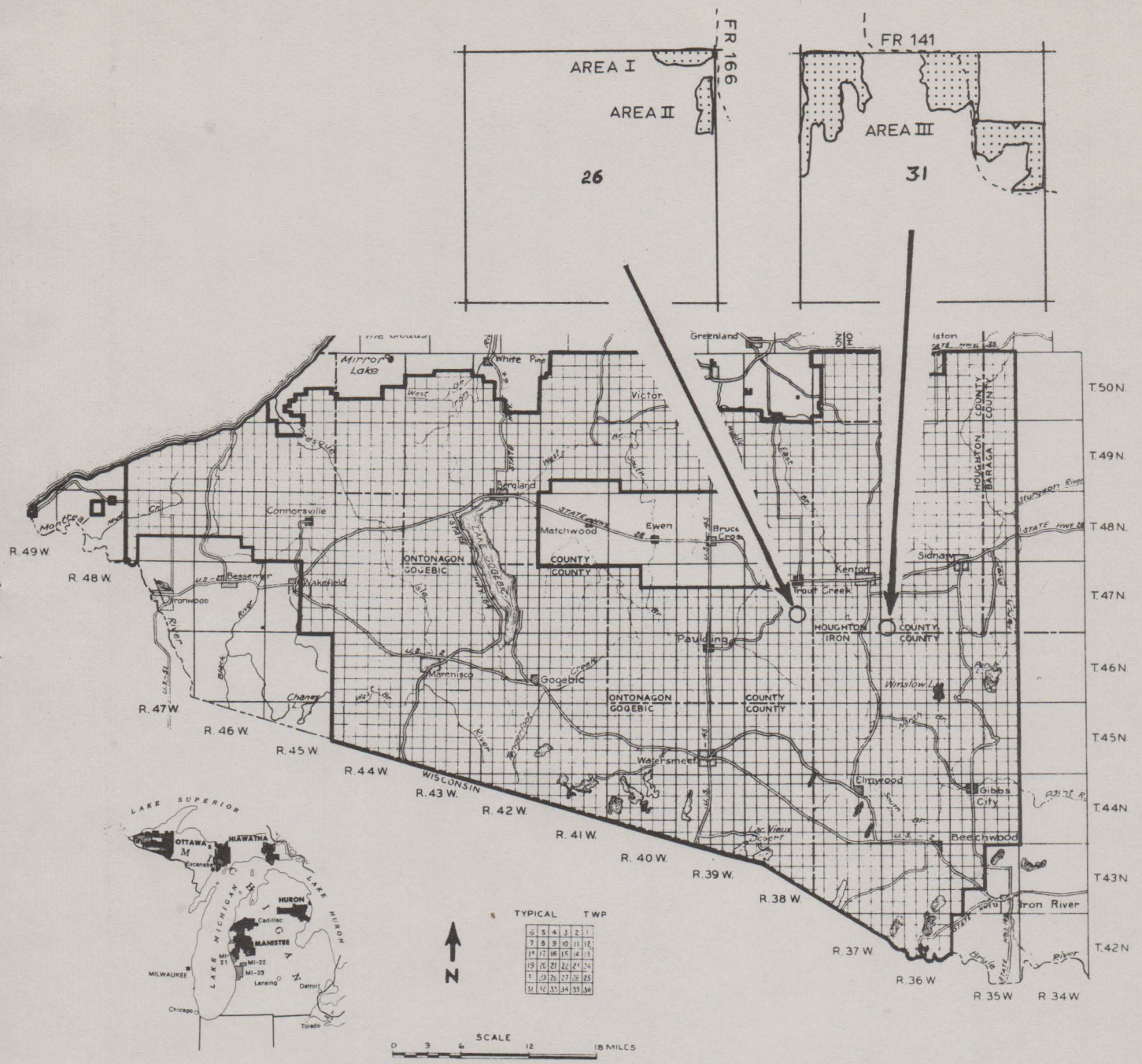
The good growth and the 7 ft. height of trees makes Area I relatively resistant to tree mortality. The 1969 defoliation was considered light (15%) with less than 1% of the trees moderately defoliated. However, continued increase in defoliation could result in tree mortality. Area I has sufficiently high population to be considered for suppression in 1970.

The NE unit of Area III has a smaller sawfly population than Area I, but the tree height is only about 4 feet. Therefore, this unit also should be considered for suppression, since tree mortality is likely if the sawfly population increase continues.

The control proposals should be made now to reserve necessary funds. However, the earliest evaluation of 1970 sawfly populations can be made only in June, 1970, after egg laying is completed.

Only DDT is registered for red-headed pine sawfly control. However, DDT is not recommended because of its adverse effects to non-target organisms and its long residual persistence in the environment.

Malathion is effective against sawflies in general. Good control was obtained with 1/2 lb. malathion per acre applied as water emulsion with a mistblower (Fowler, 1969). This control method may be registered by next year. If not, further pilot tests will be necessary in cooperation with the St. Paul Field Office.



Map 1. Red-headed pine sawfly infestations on the Ottawa N.F. - 1969

G. Recommendations

1. The Forest Manager is advised to consider insecticidal control of the red-headed pine sawfly in Areas I and NE part of II. Individual tree treatment may be considered for the adjoining areas of the high infestations.

   Adverse effects and Cost-Benefits Analysis (FSM 5230) should be based on the use of 1/2 lb. malathion water emulsion applied with a mistblower. The St. Paul Field Office should be consulted for additional technical information when needed.

2. All field personnel should be on the lookout for red pine defoliation and report their discoveries on Form NA 5200-1.

H. Literature References

Benjamin, D. M. 1955. The Biology and Ecology of the red-headed pine sawfly. USDA, Forest Service Tech. Bull. 118. 57 pp.

Fowler, R. F. 1969. Red-headed pine sawfly control Malathion on the Manistee National Forest. USDA, Forest Service, NA S&PF, St. Paul Field Office, Report No. S-69-31. 2 pp.

Hastings, A. R. 1968. Biological evaluation of red-headed pine sawfly infestations on the Ottawa and Hiawatha National Forests 1968. USDA, Forest Service, NA S&PF, St. Paul Field Office, Report No. S-68-12. 4 pp.